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### REMARKS

Claims 1-9, 11-14 and 16-25 are all the claims presently pending in the application.

Claims 1-7, 9, 13 and 16-25 have been amended to more particularly define the invention and claims 10 and 15 have been canceled. Claims 1, 16, 20 and 23-24 are independent.

Attached hereto is a marked-up version of the changes made to the claims by the current Amendment. The attached page is captioned "Version with markings to show changes made."  
~~These amendments are made only to more particularly point out the invention for the Examiner~~  
and not for narrowing the scope of the claims or for any reason related to a statutory requirement for patentability.

Applicant also notes that, notwithstanding any claim amendments herein or later during prosecution, that Applicant's intent is to encompass equivalents of all claim elements.

Claims 18 and 19 stand rejected upon informalities (e.g., 35 U.S.C. § 112, second paragraph). Claims 16, 20, and 24 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Kazama, et al. (U.S. Patent No. 6,111,580). Claims 1-15, 17-19, 21-23, and 25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kazama, et al., in view of Numazaki (U.S. Patent No. 5,990,893).

These rejections are respectfully traversed in the following discussion.

#### **I. THE CLAIMED INVENTION**

The claimed invention is directed to a method of enabling a computer system to recognize specific actions of a user. The method includes capturing an image of a user within a window

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which includes a target area, displaying the image, receiving an indication from the user that a state of the target area including the user image is to be associated with a computer event, associating the computer event with the state of the target area in response to the indication, and storing information in a memory device regarding the association.

Conventional computers that have been adapted for users having physical disabilities have included devices like a touch screen or a single-switch device. However, these computers have distinct disadvantages. First, they rely upon physical devices that require careful setup for the user. Second, they are prone to damage and/or vandalism. Third, they do not allow the full range of expression needed to effectively interact with computer applications.

Some conventional computer systems are capable of interacting with users by recognizing gestures using cameras. However, these systems are generally very limited in the type of gestures that they are capable of recognizing, they require extensive customization for each user, they are not robust in the face of environmental conditions, they are not reliable or they require extensive user training.

By contrast, the present invention provides a robust, flexible and user friendly method and apparatus which allows a computer to recognize a wide range of user actions using a camera.

## II. THE 35 U.S.C. § 112, SECOND PARAGRAPH REJECTION

The Examiner alleges that claims 18 and 19 are indefinite. While Applicant submits that such would be clear to one of ordinary skill in the art taking the present Application as a whole, to speed prosecution claims 18 and 19 have been amended. In particular, this Amendment

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amends claims 18 and 19 to provide antecedent basis for "said target area" in accordance with Examiner Dela Torre's helpful suggestions.

In view of the foregoing, the Examiner is respectfully requested to withdraw this rejection.

### III. THE PRIOR ART REJECTIONS

#### A. The Kazama et al. reference

Regarding claims, 16, 20 and 24, the Examiner alleges that the Kazama et al. reference teaches the claimed invention. Applicant submits, however, that there are elements of the claimed invention which are neither taught nor suggested by this reference.

The Kazama et al. reference discloses a system that first determines whether a user is actively operating the system and, if the system determines that the user is actively operating the system, determines whether the user performs an act that corresponds to a command. In particular, the Kazama et al. reference discloses a gaze direction detector which determines whether a user is actively operating the system based upon whether an image of a user indicates that the user is directing attention to the system (col. 3, line 16 - col. 5, line 25). The Kazama et al. reference also appears to disclose determining the attention of a user based upon an analysis of the user's voice (col. 6, lines 32 - 44) or through direct contact (col. 6, lines 45 - 59).

The Kazama et al. reference also appears to disclose a gesture recognition section that requires the user to wear a glove including colored balls at the end of each finger of the user (col. 5, lines 26 - 65 and col. 9, lines 21 - 42).

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However, as admitted by the Examiner, the Kazama et al. reference does not teach or suggest capturing an image of a target area including a user image and associating a computer event with the state of the target area which includes the user image.

**B. The Kazama et al. reference in view of the Numazaki reference**

Regarding claims 1-15, 17-19, 21-23 and 25, the Examiner alleges that the Numazaki reference would have been combined with the Kazama et al. reference to form the claimed invention. Applicant submits, however, that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

Firstly, Applicant submits that these references would not have been combined as alleged by the Examiner. Indeed, the references are directed to completely different matters and problems. Specifically, the Kazama et al. reference is directed to preventing inadvertent operation of a computer device which includes a gesture and/or voice recognition input device by providing a system that determines whether a user's attention is actually being directed toward the computer device.

In contrast, the Numazaki reference is specifically directed to the completely different matter of enabling a computer system to select an object on a display by determining a change in direction of a series of positions input from a pointer device. Thus, the references would not have been combined, absent hindsight.

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Secondly, even assuming arguendo that one of ordinary skill in the art would have been motivated to combine these references, the combination would not teach or suggest each and every element of the claimed invention.

~~The Numazaki reference, like the Kazama et al. reference, does not teach or suggest~~  
associating a state of a target area which includes a user image with a computer event. Rather, the Numazaki reference appears to disclose displaying an object associated with a specified region 13 and determining whether a pointer 10 has contact with the region 13. The Numazaki reference appears to disclose discriminating a gesture input on the basis of a change in position data to designate a specific operation (col. 2, lines 29-32). However, the Numazaki reference does not disclose associating a computer event with a state of a target area which includes an image of a user. In other words, the Numazaki reference does not rely upon the image of a user within a target area to determine an associated computer event.

The present invention is capable of determining whether to perform a computer event based upon the state of a target area which includes a user image. Therefore, this invention enables operation of a computer system based upon the user image being placed within a target area and the state of the target area including that user image.

The applied references do not teach or suggest associating a computer event with a state of a target area which includes an image of a user. Therefore, the Examiner is respectfully requested to withdraw this rejection.

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#### IV. FORMAL MATTERS AND CONCLUSION

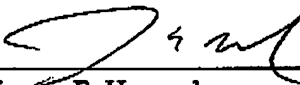
In view of the foregoing amendments and remarks, Applicant respectfully submits that claims 1-9, 11-14 and 16-25, all the claims presently pending in the Application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the Application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Assignee's Deposit Account No. 50-0510.

Respectfully Submitted,

Date: 12/19/02

  
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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS:**

Please cancel claims 10 and 15 without prejudice or disclaimer.

Please amend claims 1-7, 9, 13 and 16-25 as follows:

1. (Amended) A method of enabling a computer system to recognize specific actions of a user, said method comprising:

capturing a first [displaying an] image of a user within [a window on a screen, said window including] a first target area in a window;  
displaying said first target area including said user image;  
receiving a first indication from said user that a state of said first target area including said user image is to be associated with a first computer event;

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associating said [a] first computer event with said state of said first target area in response to said first indication [a first user action displayed in said target area]; and  
storing information in a memory device regarding said association [such that said first user action is associated with said first computer event].

2. (Amended) The method of claim 1, further comprising:  
capturing a second image of said user within said first target area; and  
displaying said second image, wherein said first indication indicates that a change of state between said first and second images in said first target area is to be associated with said

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computer event, and wherein said associating comprises associating said change of state with said first computer event [wherein said association comprises said computer system detecting a change of state within said target area as said first user action].

3. (Amended) The method of claim 2, wherein said change of state comprises a change of [a pattern of] color in said first target area.

4. (Amended) The method of claim 3, wherein said [association further] associating comprises storing a summary of said colors [color pattern] in said first target area.

5. (Amended) The method of claim 1, wherein said change of state <sup>comprises</sup> is a change of position of said image of said user [association comprises said computer system detecting motion] within said first target area [as said first user action].

6. (Amended) The method of claim 1, wherein said first image includes an image of [association comprises said computer system detecting] an object in [entering] said first target area [as said first user action].

7. (Amended) The method of claim 1, wherein said first computer event [association] comprises [said computer system recognizing said first user action as] a specific computer function to execute [when said first user action occurs].



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9. (Amended) The method of claim 1, wherein said first computer event [association] comprises [associating] a plurality of computer events [while said first user action remains displayed in said target area].

13. (Amended) The method of claim 1, wherein said first image further comprises a second target area, the method further comprising:

[producing another target area within said window;]

receiving a second indication from said user that a state of said second target area including a user image is to be associated with a second computer event; and  
associating said [a] second computer event with a state of said second [user action displayed in said another] target area, wherein said storing of information further comprises[;  
and] storing information in said memory device regarding said association [such that said second user action is associated with said second computer event].

16. (Amended) A method of using a computer system having an image capture system that displays an image of a user on a display screen, said method comprising:

enabling said computer system to associate a state of a first target area which includes a user image with a first computer event [recognize a specific user action as corresponding to a specific computer event];

capturing said state of said first target area including said user image [specific user action] with said image capture system; and

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performing said [specific] first computer event in response to [when] said state of said first target area being [is] captured by said image capture system.

17. (Amended) The method of claim 16, wherein said enabling comprises.

capturing said first image;

displaying said first image [of said user within a window on said display screen, wherein a target area is located within said window];

receiving a first indication from said user that a state of said first target area including said user image is to be associated with a first computer event;

associating said [specific user action with said specific] first computer event with said state of said first target area in response to said first indication; and

storing information in a memory device regarding said association [such that said specific user action is associated with said specific computer event].

18. (Amended) The method of claim 16, further comprising positioning said first target area within said window.

19. (Amended) The method of claim [16] 17, further comprising:

producing [another] a second target area within said window;

capturing a second image including said second target area which includes a user image;

receiving a second indication from said user that a state of said second target area

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including said user image is to be associated with a second computer event; and

associating said [a] second computer event with [a] said state of said second [second user action displayed in said another] target area in response to said second indication; and

storing information in said memory device such that said state of said second target area [user action] is associated with said second computer [user] event.

20. (Amended) A system that associates a specific user action [actions] with a first [specific] computer command [commands], said system comprising:

an image capture system that captures [an] a first image of a user within a window including a first target area which includes said user image, wherein the state of the first target area including said user image indicates said specific user action;

an image display system that displays said first image captured by said image capture system[ within a window] on a display screen; and

a computer system that recognizes a state of said first target area which includes said user image [said specific user actions] and associates said state of said first target area [specific user actions] with said first [specific] computer command [commands].

21. (Amended) The system of claim 20, wherein said computer system is adapted to perform [includes] a training phase to train the computer system to recognize said specific user action [actions], said training phase comprising:

displaying said first image [of said user] that is captured by said image capture system

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[within said window on said display screen, said window] including said first [a] target area;  
associating said [a] first computer command with said state of said first [a first user action  
displayed in said] target area which includes said user image; and  
storing information in a memory device regarding said association [such that said first  
user action is associated with said first computer command].

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22. (Amended) The system of claim 21, wherein said training phase further comprises:

[producing another] capturing a second image including a second target area which  
includes said user image [within said window];

associating a second computer command with a state of said second [user action  
displayed in said another] target area which includes said user image; and  
storing information in said memory device regarding said association of [such that] said  
state of said second target area [user action is associated] with said second computer command.

23. (Amended) A program storage device readable by machine, tangibly embodying a  
program of instructions executable by the machine to perform method steps for training a system  
to recognize specific user actions, said method [steps] comprising:

capturing a first [displaying an] image of a user within [a window on a screen, said  
window including] a first target area;  
displaying said first image including said user image in said first target area;  
receiving a first indication from said user that a state of said first target area including

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said user image is to be associated with a first computer event;

associating said [a] first computer event with said state of said first target area in response to said first indication [a first user action displayed in said target area]; and

storing information in a memory device regarding said association [such that said first user action is associated with said first computer event].

24. (Amended) A method of enabling a computer system to recognize specific actions of a user, said method comprising:

associating a first computer event with a state of a first target area including a user image [action displayed on a display screen]; and

storing information in a memory device regarding said association [such that said first action is associated with said first computer event].

25. (Amended) The method of claim 24, further comprising capturing said [displaying an] image of said user [within a window on said screen, said window including a target area, and said association comprises associating said first computer event with said first action displayed on said screen].